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Nour-Eddine Tazine

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EXAMINER

SAUNDERS JR, JOSEPH

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/541,577	Applicant(s) TAZINE ET AL.	
	Examiner Joseph Saunders	Art Unit 2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant is advised that the Final Rejection mailed September 5, 2008 is vacated due to the discovery of new matter in the amendment filed May 13, 2008. Therefore, the Amendment After Final will not be entered and will not be considered. This office action will be based on the amendment filed May 13, 2008. Claims 1 – 25 are currently pending and considered below. Newly discovered references are also applied and therefore this is a Non-Final rejection.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 20 – 25 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 20 and 23 contain the new limitation of "assigning some of the audio tracks of said cluster, including the newly added track, based on the respective characteristic parameters, to the new cluster while some audio tracks remain in said cluster". Also claims 21 and 24 contain the new of "wherein the step of assigning the audio tracks of said cluster to the new cluster uses the K-means algorithm to decide which audio tracks are assigned to the new cluster". For the

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aforementioned limitations the Applicant seems to draw support from page 6 line 25 – page 7 line 2 of the original specification, however this paragraph states “The second step consists of clustering the music tracks. Using the descriptors defined in the first step, the tracks can be classified into homogeneous classes. These classes are more valuable to a user than classifying music by artist or title. Unsupervised algorithms may be used to cluster the tracks into packets with similar properties. Examples of such algorithms are the K-means or Self Organizing Maps. A new cluster may be automatically generated when the dissimilarity of a newly added track, compared to existing clusters, reaches a certain minimum level, and in that case the newly added track will be associated with the new cluster” and therefore does not explicitly disclose “assigning some of the audio tracks of said cluster... to the new cluster” and further “some audio tracks remain in said cluster”.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 2, 4 – 10, 12, 13, and 16 – 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Obrador (US 7,149,755 B2), hereinafter Obrador.

Claim 1: Obrador discloses a method for creating or accessing a menu for audio content stored in a storage means, the content consisting of audio tracks, and the menu containing representations of said audio tracks, the method comprising: classifying ("organized") the audio tracks ("As used herein, the term "media object" refers broadly to any form of digital content, including text, audio, graphics, animated graphics and full motion video," Column 3 Lines 55 – 58 also "digital content may be compressed using a compression format that is selected based upon the digital content type (e.g., an MP3 or a WMA compression format for audio works," Column 4 Lines 3 – 6) into groups or clusters (see "Browsing a Media Object Cluster Hierarchy," Column 9), wherein said classification is performed according to characteristic parameters of said audio tracks ("The metadata similarity may correspond to low-level features (e.g., motion activity, texture or color content, and audio content) or high-level features (e.g., meta data, such as keywords and names; objects, such as persons, places and structures; and time-related information, such as playback length and media object creation date). One or more known media object processing techniques (e.g., pattern recognition techniques, voice recognition techniques," Column 9 Lines 53 – 67); detecting addition of a new audio track ("As these collection grow in number and diversity, individuals and organizations increasingly will require systems and methods for organizing and browsing the digital content of their collections," Column 1 Lines 18 – 21, and therefore the system must detect new audio tracks in order to organize the growing collection.); determining characteristic parameters of the new audio track ("metadata similarity

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criteria"); based on the determined characteristic parameters of the new audio track classifying the new audio track into an existing group or cluster ("At any stage during this process, the user may anchor a particular media object and organize the media object collection around the anchored media object in accordance with one or more selected metadata similarity criteria," Column 11 Lines 17 – 21); selecting automatically an audio track being a representative for the cluster into which the new audio track was classified, wherein the medoid of the cluster is selected ("For example, the media objects may be ordered in accordance with a selected context criterion, and the representative media object may correspond to the centroid or some other statistically-weighted average of a selected cluster of the ordered media objects," Column 10 Lines 35 – 39); automatically generating a reproducible audio extract from said representative audio track; and associating said audio extract as representative of said cluster to a menu list ("Media objects 98 may be indexed with logical links into the set of data structure sequences, as shown in Fig. 8A. Each data structures sequence link into a media file may be identify a starting point in the media file and the length of the corresponding sequence," Column 7 Lines 46 – 50 also "The media file and the media objects preferably are presented to the user through multimedia album page, which is a windows-based GUI that is displayed on a display monitor 42 (Fig. 2)," Column 8 Lines 3 – 7).

Claim 2: Obrador discloses the method according to claim 1, wherein said characteristic parameters used for classification of audio content comprise one or more

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audio descriptors, the audio descriptors being either physical features, or perceptual features, or psychological or social features of the audio content ("The metadata similarity may correspond to low-level features (e.g., motion activity, texture or color content, and audio content) or high-level features (e.g., meta data, such as keywords and names; objects, such as persons, places and structures; and time-related information, such as playback length and media object creation date). One or more known media object processing techniques (e.g., pattern recognition techniques, voice recognition techniques," Column 9 Lines 53 – 67)

Claim 4: Obrador discloses the method according to claim 1, wherein the audio tracks within a cluster have variable order, so that the user listens to a randomly selected track when having selected a cluster, with said track belonging to said cluster (variable based on similarity).

Claim 5: Obrador discloses the method according to claim 1, wherein a user can modify the result of automatic classification of audio tracks (e.g., by choosing a different anchor).

6. Method according to claim 1, wherein a user can modify the classification rules for automatic classification of audio tracks (e.g., by choosing a different anchor).

Claim 7: Obrador discloses the method according to claim 1, wherein the actual audio data are clustered within said storage means according to said menu ("The media file

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and the media objects preferably are presented to the user through multimedia album page, which is a windows-based GUI that is displayed on a display monitor 42 (Fig. 2),” Column 8 Lines 3 – 7).

Claim 8: Obrador discloses the method according to claim 1, wherein the audio extract is a sample from the audio track (“Media objects 98 may be indexed with logical links into the set of data structure sequences, as shown in Fig. 8A. Each data structures sequence link into a media file may be identify a starting point in the media file and the length of the corresponding sequence,” Column 7 Lines 46 – 50).

Claim 9: Obrador discloses the method according to claim 1, wherein audio extracts are created additionally for audio tracks not being representatives of clusters (“Media objects 98 may be indexed with logical links into the set of data structure sequences, as shown in Fig. 8A. Each data structures sequence link into a media file may be identify a starting point in the media file and the length of the corresponding sequence,” Column 7 Lines 46 – 50).

Claim 10: Obrador discloses the method according to claim 1, wherein the length of audio extracts is not predetermined (“Media objects 98 may be indexed with logical links into the set of data structure sequences, as shown in Fig. 8A. Each data structures sequence link into a media file may be identify a starting point in the media file and the length of the corresponding sequence,” Column 7 Lines 46 – 50).

Claim 12: Obrador discloses the method according to claim 1, wherein said menu is hierarchical, such that a cluster may contain one or more subclusters (see "Browsing a Media Object Cluster Hierarchy," Column 9).

Claim 13: Obrador discloses the method according to claim 1, wherein the classification rules are modified automatically if a defined precondition is detected, and a reclassification may be performed (e.g., by choosing a different anchor).

Claim 19: Obrador discloses the method according to claim 1, wherein the audio extract is an audio sequence being synthesized from the actual audio track ("Media objects 98 may be indexed with logical links into the set of data structure sequences, as shown in Fig. 8A. Each data structures sequence link into a media file may be identify a starting point in the media file and the length of the corresponding sequence," Column 7 Lines 46 – 50).

Claims 16 – 18 are substantially similar in scope to claim 1 and is also disclosed in Figure 2, and therefore is rejected for the same reasons as claim 1 with addition of Figure 2.

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Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Obrador in view of Platt (US 6,987,221), hereinafter Platt.

Claim 3: Obrador discloses the method according to claim 1, but does not disclose whether or not an audio track can be classified into more than one cluster. Platt discloses a similar clustering technique for audio and while not explicitly stated teaches, since the tracks are placed in the playlist based upon the results of a vector which is based upon multiple attributes of the item (Column 10 Lines 9 – 48). Therefore, it would have been obvious to one of ordinary skill in the art that when generating multiple playlists as disclosed by Platt that the system of Platt may decide that a song may have the minimum required attributes necessary to match more than one playlist category and therefore be classified in more than one playlist. Since excluding songs from being in more than one playlist would be disadvantages to the user, since the user wants the best matching songs in each playlist. Therefore, when applying a similar technique in Obrador, it would have been obvious to one of ordinary skill in the art at the time of the invention to generate clusters in a similar manner.

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Claim 11: Obrador discloses the method according to claim 1, but does disclose wherein one of said clusters has no representative track. Platt discloses a similar clustering technique for audio and while not explicitly stated teaches how to determine the order among seed items when more than one seed item is selected. And therefore while one of ordinary skill in the art may consider any one of the seed items in this case to be the representative track, it would also have been obvious to one of ordinary skill in the art at the time of the invention that a representative track does not exist since a determination cannot be made among seed items. Therefore, when applying a similar technique in Obrador, it would have been obvious to one of ordinary skill in the art at the time of the invention to generate clusters in a similar manner.

8. Claims 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Obrador in view of Mercer et al. (US 7,043,477), hereinafter Mercer.

Claims 14 and 15: Obrador discloses the method according to claim 13, but does not disclose wherein said precondition comprises that the difference between the number of tracks in a cluster and the number of tracks in another cluster reaches a maximum limit value, and wherein said precondition comprises that all stored tracks were classified into one cluster, and the total number of tracks reaches a maximum limit value. Mercer discloses where bounds are set when determining the size of playlists (Column 8 Line 40 - Column 9 Line 62). Therefore, it would have been obvious to one of ordinary skill in the art given the teaching of Mercer to incorporate a limit between two playlists or a

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single sequence in the invention of Obrador to determine how classification is performed, thereby allowing for example "If composer information is available for some of the selected media files (e.g., "if greater than twenty-five percent), the authoring software creates a menu 'Composer' ..." thereby further automating the classification process, Mercer Column 9 Lines 22 – 27.

9. Claims 20 – 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Obrador in view of Robinson (US 7,072,846 B1), hereinafter Robinson, with further support from Ferhatosmanoglu et al. (Approximate Nearest Neighbor Searching in Multimedia Databases), hereinafter Ferhatosmanoglu.

Claim 20: Obrador discloses the method according to claim 1, the method further comprising the steps of: selecting automatically an audio track being a representative for the new cluster wherein the medoid of the new cluster is selected (Since "objects are grouped into clusters, each of which preferably contains a fixed number of media objects," there must be the creation of new clusters when the collection grows in number and diversity, and therefore the system selects a media object corresponding to "the centroid or some other statistically-weighted average of a selected cluster of the ordered media objects," Column 10 Lines 18 – 39); automatically generating a reproducible new audio extract from said audio track representative for the new cluster and associating said new audio extract as representative of said new cluster to the menu list ("Media objects 98 may be indexed with logical links into the set of data

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structure sequences, as shown in Fig. 8A. Each data structures sequence link into a media file may be identify a starting point in the media file and the length of the corresponding sequence,” Column 7 Lines 46 – 50 also “The media file and the media objects preferably are presented to the user through multimedia album page, which is a windows-based GUI that is displayed on a display monitor 42 (Fig. 2),” Column 8 Lines 3 – 7). Obrador does not disclose the method further comprising after the step of classifying the new audio track into an existing group or cluster and before the step of selecting automatically an audio track as representative for the cluster into which the new audio track was classified, the steps of: detecting the number or a dissimilarity range of the tracks within said cluster; if the detected number or dissimilarity range is above a minimum level, automatically creating a new cluster; assigning some of the audio tracks of said cluster, including the newly added track, based on the respective characteristic parameters, to the new cluster while some audio tracks remain in said cluster. Robinson discloses a similar method and system for clustering songs and recommending the best song in the cluster to the user, Column 13 Lines 46 - 54. Robinson also teaches setting “the average number of songs desired per cluster,” Column 4 Lines 65 – 67, similar to Orbador’s teaching of fixing the number of media objects in a cluster. Robinson further explains, “As new songs are added to the system, new clusters are automatically created such that the average number of songs remains approximately the same; the optimization process then populates the cluster. These clusters, in various embodiments, may start out empty before they are optimized, or may be initially populated with new songs or randomly chosen songs,” Column 4 Line

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67 – Column 5 Line 7. Robinson also teaches that a wide range of clustering approaches fall within the scope of the invention and gives provides source code for the standard k-means clustering concept as an example. To further support the technique of Robinson, Ferhatosmanoglu teaches the “k-means algorithm [13] iteratively constructs a number of clusters with a representative for each cluster such that the error in representation is minimized,” Page 506 Column 2. Ferhatosmanoglu like Obrador and Robinson also teaches the clustering algorithm limits “the size of each cluster from both above and below,” Page 507 Column 1. Ferhatosmanoglu explains, “If the size goes above the upper threshold, the cluster is split into two. If the size goes down below the lower threshold, then the cluster centroid is erased from the list of centroids. To split a cluster, we first duplicate the cluster centroid, and then perturb the exact copies randomly. It is known that K-means algorithm is sensitive to initialization. Since we have this splitting mechanism, instead of starting from cluster centroids chosen by some pre-processing scheme, we start by a single cluster, and the algorithm automatically creates new clusters until the population of each cluster is below the threshold. As we will demonstrate later, by having a lower threshold for cluster size, several queries can be answered by retrieving only a very small number of clusters. Also, by limiting the cluster sizes from above, we avoid extremely unbalanced distribution of data over the clusters. Although the minimum and maximum cluster sizes are not dominant factors in the performance of our technique, reasonable values need to be set for the design purposes. Therefore, given the teachings of Robinson and Ferhatosmanoglu, it would have been obvious to one of ordinary skill in the art at the time of the invention to use

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the k-means algorithm as suggested by Robinson and further explained by Ferhatosmanoglu with limits placed on the size of the clusters when adding new songs to a collection in the invention of Obrador, thereby realizing the aforementioned advantages while fixing the number of media objects in a cluster that may be conveniently presented to a user at the same time (Obrador Column 10 Lines 23 – 27).

Claim 21: Obrador, Robinson, and Ferhatosmanoglu disclose the method according to claim 20, wherein the step of assigning some of the audio tracks of said cluster to the new cluster uses the K-means algorithm to decide which audio tracks are assigned to the new cluster (k-means, Robinson Column 4 Line 54 – Column 5 Line 7 and Ferhatosmanoglu Page 506 Column 2 – Page 507 Column 1).

Claim 22: Obrador, Robinson, and Ferhatosmanoglu disclose the method according to claim 20, wherein the minimum level to which the detected number of tracks within said cluster is compared depends on the number of tracks in other existing clusters (“media objects are grouped into clusters, each of which preferably contains a fixed number of media objects,” Obrador Column 10 Lines 23 – 27, “average number of songs per cluster,” Robinson Column 4 Line 54 – Column 5 Line 7, and “limit” “threshold,” Ferhatosmanoglu Page 506 Column 2 – Page 507 Column 1).

Claims 23 – 25 are substantially similar in scope to claims 20 – 22, respectfully, and therefore are rejected for the same reasons.

Response to Arguments

10. Applicant's arguments with respect to claims 1 – 19 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Saunders whose telephone number is (571) 270-1063. The examiner can normally be reached on Monday - Thursday, 9:00 a.m. - 4:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on (571) 272-7499. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. S./

Examiner, Art Unit 2614

/CURTIS KUNTZ/

Supervisory Patent Examiner, Art Unit 2614